AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

- 1. (Original) A diagnostic system for a compressor assembly including a compressor and a motor protector, said system comprising logic circuitry associated with the motor protector and operable to analyze a status of the motor protector as a function of time and identify a specific fault cause.
- 2. (Original) The diagnostic system of Claim 1, further comprising a demand signal sensor, wherein said logic circuitry is associated with said demand signal sensor.
- 3. (Original) The diagnostic system of Claim 2, further comprising a current sensor, wherein said logic circuitry is associated with said current sensor.
- 4. (Original) The diagnostic system according to Claim 2, wherein said demand signal sensor monitors a supply voltage.
- 5. (Original) The diagnostic system according to Claim 2, wherein said demand signal sensor is in communication with a system controller supplying a signal indicating demand.

- 6. (Previously Presented) The diagnostic system according to Claim 3, further comprising an indicator associated with said logic circuitry, said indicator receiving a signal from said logic circuitry to indicate a fault based on said current and demand signal.
- 7. (Original) The diagnostic system according to Claim 6, wherein said indicator is a plurality of lights indicating the presence or absence of a fault condition.
- 8. (Original) The diagnostic system according to Claim 1, wherein said logic circuitry is operable to output a coded sequence of electrical pulses to identify said specific fault cause.
- 9. (Original) The diagnostic system according to Claim 1, wherein said logic circuitry is operable to analyze said operating condition and identify a specific fault cause while the compressor is operating.
- 10. (Original) A method for diagnosing a compressor assembly including a compressor and a motor protector, said method comprising:

analyzing a status of the motor protector as a function of time; and identifying a compressor fault cause based on said analyzing.

- 11. (Original) The method according to Claim 10, further comprising: sensing a demand signal;sensing a current; andanalyzing said sensed demand signal and said current.
- 12. (Original) The method according to Claim 11, wherein said identifying a compressor fault cause includes indicating a specific fault cause based on said sensed current and demand signal.
- 13. (Original) The method according to Claim 10, wherein said identifying includes outputting a coded sequence of electrical pulses to identify a specific fault cause.
- 14. (Original) The method according to Claim 10, wherein said identifying occurs while the compressor is operating.
- 15. (Previously Presented) The diagnostic system according to Claim 1, further comprising an indicator associated with said logic circuitry, said indicator receiving a signal from said logic circuitry to indicate a fault.